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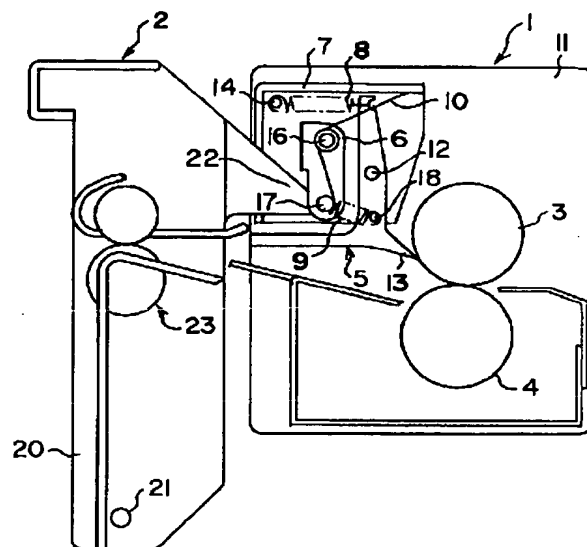
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(54)【発明の名称】 定着装置における用紙剥離装置

(57)【要約】

【目的】 剥離爪に対して安定した加圧力が加えられて定着ローラの表面及び剥離爪の爪先の摩耗を生ずることなく、用紙の分離性が良好であり、また排紙部の開放時において、操作者の安全及び剥離爪の保護が良好に行われる用紙剥離装置を提供する。

【構成】 定着ローラと、この定着ローラに加圧される加圧ローラとを有する定着部と、この定着部の排紙側に開閉可能に設置された排紙部とを具え、定着部に定着ローラに接離可能な爪先を有する剥離爪を設け、この剥離爪はその爪先が排紙部の開放時に定着ローラから離間し、同閉鎖時に定着ローラに加圧当接する。



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【特許請求の範囲】

【請求項1】 定着ローラと、この定着ローラに加圧される加圧ローラとを有する定着部と、この定着部の排紙側に開閉可能に設置された排紙部とを具えた定着装置において、前記定着部に定着ローラに接離可能な爪先を有する剥離爪を設け、この剥離爪はその爪先が前記排紙部の開放時に定着ローラから離間し、同閉鎖時に定着ローラに加圧当接することを特徴とする定着装置における用紙剥離装置。

【請求項2】 排紙部の閉鎖時には、定着部に設けた単一の付勢部材のみによって剥離爪の爪先を定着部の定着ローラに加圧当接し、排紙部の開放時には定着部に設けた解除部材によって剥離爪の爪先を定着ローラから離間する請求項1の定着装置における用紙剥離装置。

【発明の詳細な説明】

【0001】

【産業上の利用分野】 この発明は複写機、プリンタ、ファクシミリ等の定着装置における用紙剥離装置に関する。

【0002】

【従来の技術】 従来の定着装置は、その主要部分が図面に示すこの発明と同様に構成されているので、これを参照して説明することとすると、加熱源を有する定着ローラ3と、定着ローラ3に加圧される加圧ローラ4とを有する定着部1と、この定着部1の排紙側に開閉可能に設置された排紙部2とを具え、定着ローラ3から用紙を剥離する剥離爪5が設けられている。そして剥離爪5は、

(1) 定着部1に固定されている形式のものと、(2) 排紙部2に取付けられて、排紙部2の開放時に定着ローラ3から離間し、閉鎖時に当接する形式のものとがあり、(2)のものには、さらに開放時における操作者の安全及び剥離爪5の保護を目的として、剥離爪5の爪先が移動可能となっているものがある。

【0003】

【発明が解決しようとする課題】 ところで(1)のようなものは、用紙が剥離爪のところでジャムを起こすと、このジャム用紙を除去するのが著しく困難であるという問題がある。また(2)のようなものは、ジャム用紙除去のために排紙部を開放するとき、操作者の安全及び剥離爪の保護が完全に行われにくいのに加えて、剥離爪を定着ローラに当接させるために排紙部の一部を加圧部とし、または加圧部材を設けることとなるが、これでは排紙部と定着部との相対的位置関係によっては、安定した加圧力をうることができないため、定着ローラの表面及び剥離爪の爪先の摩耗、用紙の分離性能の劣悪等を引き起こすという問題がある。

【0004】 そこでこの発明の目的は、前記のような従来の定着装置のもつ問題を解消し、剥離爪に対して安定した加圧力が加えられて定着ローラの表面及び剥離爪の爪先の摩耗を生ずることなく、用紙の分離性が良好であ

り、また排紙部の開放時において、操作者の安全及び剥離爪の保護が良好に行われる用紙剥離装置を提供するにある。

【0005】

【課題を解決するための手段】 この発明は、前記のような目的を達成するために、請求項1の発明は、定着ローラと、この定着ローラに加圧される加圧ローラとを有する定着部と、この定着部の排紙側に開閉可能に設置された排紙部とを具えた定着装置において、前記定着部に定着ローラに接離可能な爪先を有する剥離爪を設け、この剥離爪はその爪先が前記排紙部の開放時に定着ローラから離間し、同閉鎖時に定着ローラに加圧当接することを特徴とする定着装置における用紙剥離装置にかかるものである。請求項2の発明は、請求項1の定着装置における用紙剥離装置において、排紙部の閉鎖時には、定着部に設けた単一の付勢部材のみによって剥離爪の爪先を定着部の定着ローラに加圧当接し、排紙部の開放時には定着部に設けた解除部材によって剥離爪の爪先を定着ローラから離間するものである。

【0007】

【作用】 前記のような請求項1の発明は、定着部に設けられて定着ローラに接離可能な爪先を有する剥離爪の爪先は、排紙部の開放時にはその干渉を受けることなく定着ローラから離間し、同閉鎖時にはその干渉によって定着ローラに加圧当接する。前記のような請求項2の発明は、排紙部の閉鎖時には、排紙部等他の部材の影響をうけずに定着部に設けた単一の付勢部材のみによって剥離爪の爪先を定着部の定着ローラに加圧当接し、排紙部の開放時には定着部に設けた解除部材によって剥離爪の爪先を定着ローラから離間する。

【0008】

【実施例】 図面に示す実施例において、前記従来の画像形成装置と同様の部分には、同一の符号を引用して説明を省略し、主として異なる部分について説明する。定着部1の機枠11には剥離爪ケース7が設けられ、剥離爪5はこの剥離爪ケース7内に設けられて、その中間が剥離爪ケース7に設けた支持軸12に枢着し、その下端から定着ローラ3に向けて爪先13が横方向に延びており、剥離爪5の上端と剥離爪ケース7に設けたピン14との間に爪先13を定着ローラ3に向けて付勢する第1ばね8が張設されている。この第1ばね8の下方において剥離爪ケース7に設けた支持軸16に解除レバー6の上部を枢着し、この解除レバー6の下部にピン17を突設し、このピン17と剥離爪5の下部に突設したピン18との間に爪先13に力を加えることのない第2ばね9が張設されており、支持軸16に第3ばね10が巻着して、その両端は剥離爪ケース7の上部と、ピン17とにそれぞれ係合して常時解除レバー6に図において時計方向の回転力を付与している。排紙部2は図示しない複写機等の機枠に設けた支持軸21にその機体20の下部を枢着し、上部には定着部1に

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向けて突出した加圧アーム22を設け、中間には排紙ころ対23が設けられている。前記において、第1、2、3ばね8、9、10の力の大きさは、第1ばね8<第2ばね9<第3ばね10となっている。

【0009】前記のようなものにおいて、図1は排紙部2が閉となっている状態を示し、このときには加圧アーム22が解除レバー6のピン17を押圧し、これによって第3ばね10の張力が剥離爪5に作用しなくなり、剥離爪5は第1ばね8のみに引張られて安定した加圧力で爪先13が定着ローラ3に加圧当接したままとする。このような状態のところへ用紙が右方から両ローラ3、4のニップ部に搬送され、その表面に画像が定着されたうえ剥離爪5によって剥離され、排紙部2の排紙ころ対23によって排出される。

【0010】図2は排紙部2が開となっている状態を示し、このときには加圧アーム22が解除レバー6のピン17から離間し、第3ばね10の張力によって解除レバー6が支持軸16を中心として時計方向に回動し、第1ばね8の張力に打勝って第2ばね9を介して、剥離爪5を支持軸16を中心として時計方向に回動し、その爪先13を定着ローラ3から離間する。

【0011】

【発明の効果】この発明は前記のようであって、請求項1の発明は、定着ローラと、この定着ローラに加圧される加圧ローラとを有する定着部と、この定着部の排紙側に開閉可能に設置された排紙部とを具え、定着部に定着ローラに接離可能な爪先を有する剥離爪を設け、この剥離爪はその爪先が排紙部の開放時に定着ローラから離間し、同閉鎖時に定着ローラに加圧当接するようになっているので、排紙部の開放時において、発生したジャム紙

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の除去作業等の際、操作者の安全及び剥離爪の保護が良好に行われるのに加えて、良好な作業性がえられるという効果がある。請求項2の発明は、請求項1の発明において、排紙部の閉鎖時には、排紙部等他の部材の影響を受けずに定着部に設けた単一の付勢部材のみによって剥離爪の爪先を定着部の定着ローラに加圧当接し、排紙部の開放時には定着部に設けた解除部材によって剥離爪の爪先を定着ローラから離間するようになっているので、請求項1の発明と同様の効果をもつのに加えて、剥離爪に対して安定した加圧力が加えられて定着ローラの表面及び剥離爪の爪先の摩耗を生ずることなく、用紙の分離性が良好であるという効果がある。

【図面の簡単な説明】

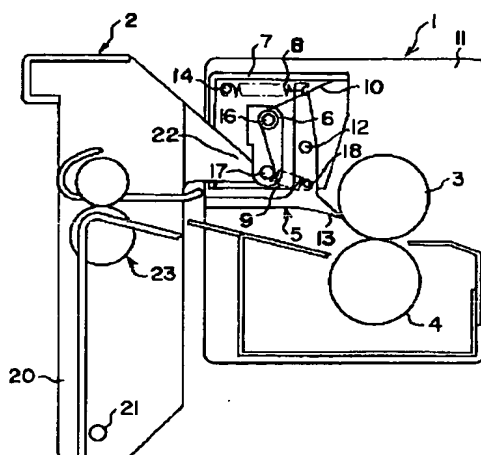
【図1】この発明の実施例の排紙部が閉となっている状態を示す一部縦断正面図である。

【図2】同上の排紙部が開となっている状態を示す一部縦断正面図である。

【符号の説明】

- 1 定着部
- 2 排紙部
- 3 定着ローラ
- 4 加圧ローラ
- 5 剥離爪
- 6 解除レバー
- 8 第1ばね
- 10 第3ばね
- 12 爪支持軸
- 16 レバー支持軸
- 21 排紙部支持軸
- 22 加圧アーム

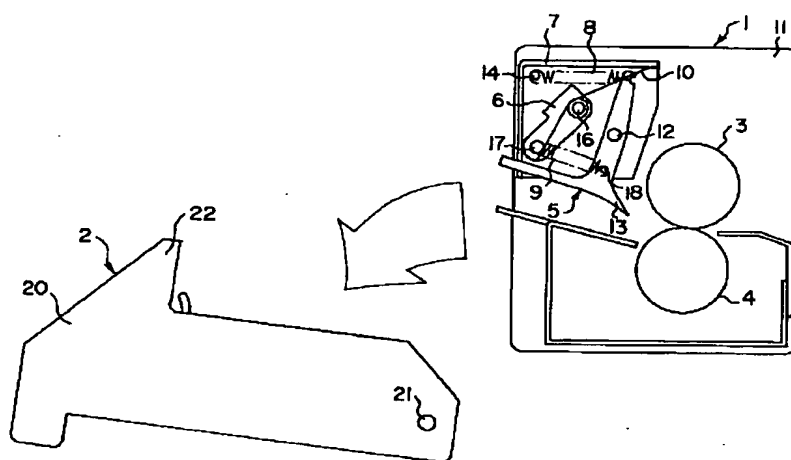
【図1】



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【 図 2 】



SHEET SEPARATING DEVICE IN FIXING DEVICE

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Publication date: 1993-05-07
Inventor(s): OTA KIYOTAKA
Applicant(s): RICOH CO LTD
Requested Patent: ☐ JP5113737
Application Number: JP19910273845 19911022
Priority Number(s):
IPC Classification: G03G15/20; B65H29/54; G03G15/00
EC Classification:
Equivalents:

Abstract

PURPOSE:To secure the safety of an operator and protect a separating claw desirably at the opened time of a paper discharge part by providing a fixing roller with a separating claw, and separating the separating claw from the fixing roller at the opened time of the paper discharge part, while keeping the separating claw in pressure contact with the fixing roller at the closed time of the paper discharge part.
CONSTITUTION:A pressure arm 22 presses a release lever 6 at the closed time of a paper discharge part, so that the tension of a spring does not act upon a separating claw 5, and the separating claw 5 is pulled only by a spring 8 so as to be left in pressure contact with a fixing roller 3. A sheet conveyed to the nip part of both rollers 3, 4 is image-fixed, then separated by the separating claw 5 and discharged by a paper discharge roller 23. At the opened time of the paper discharge part 2, the pressure arm 22 is separated from the release lever 6, and the release lever 6 is rotated by the tension of the spring 10, so that the separating claw 5 is rotated to separate its claw tip 13 from the fixing roller 3.

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PATENT ABSTRACTS OF JAPAN

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(71)Applicant : RICOH CO LTD

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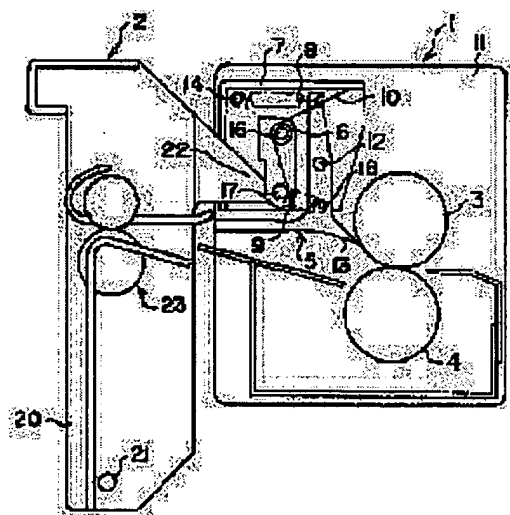
(72)Inventor : OTA KIYOTAKA

(54) SHEET SEPARATING DEVICE IN FIXING DEVICE

(57)Abstract:

PURPOSE: To secure the safety of an operator and protect a separating claw desirably at the opened time of a paper discharge part by providing a fixing roller with a separating claw, and separating the separating claw from the fixing roller at the opened time of the paper discharge part, while keeping the separating claw in pressure contact with the fixing roller at the closed time of the paper discharge part.

CONSTITUTION: A pressure arm 22 presses a release lever 6 at the closed time of a paper discharge part, so that the tension of a spring does not act upon a separating claw 5, and the separating claw 5 is pulled only by a spring 8 so as to be left in pressure contact with a fixing roller 3. A sheet conveyed to the nip part of both rollers 3, 4 is image-fixed, then separated by the separating claw 5 and discharged by a paper discharge roller 23. At the opened time of the paper discharge part 2, the pressure arm 22 is separated from the release lever 6, and the release lever 6 is rotated by the tension of the spring 10, so that the separating claw 5 is rotated to separate its claw tip 13 from the fixing roller 3.



LEGAL STATUS

[Date of request for examination]

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[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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CLAIMS

[Claim(s)]

[Claim 1] It is form exfoliation equipment in the anchorage device carry out forming the exfoliation pawl which has the tiptoe which can attach and detach to a fixing roller in said fixing section in the anchorage device equipped with the fixing section which has a fixing roller and a pressurization roller pressurized by this fixing roller, and a delivery unit installed in a delivery side of this fixing section possible [closing motion], and that tiptoe estranging from a fixing roller at the time of disconnection of said delivery unit in this exfoliation pawl, and carrying out pressurization contact to a fixing roller at the time of this closing as the

[Claim 2] Form exfoliation equipment in an anchorage device of claim 1 which estranges a tiptoe of an exfoliation pawl from a fixing roller by discharge member which carried out pressurization contact at a fixing roller of the fixing section, and formed a tiptoe of an exfoliation pawl in the fixing section only by single energization member prepared in the fixing section at the time of disconnection of a delivery unit at the time of closing of a delivery unit.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the form exfoliation equipment in anchorage devices, such as a copying machine, a printer, and facsimile.

[0002]

[Description of the Prior Art] Since a part for that principal part is constituted like this invention shown in a drawing, if the conventional anchorage device is explaining with reference to this, it has the fixing section 1 which has the fixing roller 3 which has a source of heating, and the pressurization roller 4 pressurized by the fixing roller 3, and the delivery unit 2 installed in the delivery side of this fixing section 1 possible [closing motion], and the exfoliation pawl 5 which exfoliates a form from a fixing roller 3 is formed. And the exfoliation pawl 5 has the thing of the format currently fixed to (1) fixing section 1, and the thing of the format which is attached in the (2) delivery unit 2, estranges from a fixing roller 3 at the time of disconnection of a delivery unit 2, and contacts at the time of closing, and some whose tiptoe of the exfoliation pawl 5 is movable are one of the things of (2) further for the purpose of protection of the safety of the operator at the time of disconnection and the exfoliation pawl 5

[0003]

[Problem(s) to be Solved by the Invention] By the way, a thing as shown in (1) has the problem that it is remarkable to remove [whose form is an exfoliation pawl] this jam form, and it is difficult, when a jam is raised by the way. Moreover, although a thing as shown in (2) will make a part of delivery unit the pressurization section in order [whose protection of an operator's safety and an exfoliation pawl is a pile being carried out completely when opening a delivery unit for jam form removal] are alike, in addition to make an exfoliation pawl contact a fixing roller, or a pressurization member will be prepared Since the welding pressure stabilized depending on the relative location of a delivery unit and the fixing section cannot be sold at this, there is a problem of causing inferior ** of wear of the surface of a fixing roller and the tiptoe of an exfoliation pawl and the separability ability of a form.

[0004] Then, without solving the problem which the above conventional anchorage devices have, applying the welding pressure stabilized to the exfoliation pawl, and producing wear of the surface of a fixing roller, and the tiptoe of an exfoliation pawl, the purpose of this invention has the good separability of a form, and it is to offer the form exfoliation equipment with which protection of an operator's safety and an exfoliation pawl is performed good at the time of disconnection of a delivery unit.

[0005]

[Means for Solving the Problem] In order that this invention may attain the above purposes, invention of claim 1 In an anchorage device equipped with the fixing section which has a fixing roller and a pressurization roller pressurized by this fixing roller, and a delivery unit installed in a delivery side of this fixing section possible [closing motion] An exfoliation pawl which has a tiptoe which can attach and detach to a fixing roller is formed in said fixing section, that tiptoe estranges this exfoliation pawl from a fixing roller at the time of disconnection of said delivery unit, and it starts a fixing roller to form exfoliation equipment in an anchorage device characterized by carrying out pressurization contact at the time of this closing. Invention of claim 2 estranges a tiptoe of an exfoliation pawl from a fixing roller in form exfoliation equipment in an anchorage device of claim 1 by discharge member which carried out pressurization contact at a fixing roller of the fixing section, and formed a tiptoe of an exfoliation pawl in the fixing section only by single energization member prepared in the fixing section at the time of disconnection of a delivery unit at the time of closing of a delivery unit.

[0007]

[Function] The tiptoe of the exfoliation pawl which invention of above claims 1 is prepared in the fixing section, and

has the tiptoe which can attach and detach to a fixing roller is estranged from a fixing roller, without receiving the interference at the time of disconnection of a delivery unit, and carries out pressurization contact by the interference at a fixing roller at the time of this closing. Invention of above claims 2 estranges the tiptoe of an exfoliation pawl from a fixing roller by the discharge member which carried out pressurization contact at the fixing roller of the fixing section, and formed the tiptoe of an exfoliation pawl in the fixing section at the time of disconnection of a delivery unit only by the single energization member prepared in the fixing section, without receiving the effect of other members, such as a delivery unit, at the time of closing of a delivery unit.

[0008]

[Example] In the example shown in a drawing, the same sign is quoted into the same portion as said conventional image formation equipment, explanation is omitted into it, and a mainly different portion is explained to it. The exfoliation pawl case 7 is formed in the machine frame 11 of the fixing section 1, and the exfoliation pawl 5 is formed in this exfoliation pawl case 7. The middle pivoted in the support shaft 12 prepared in the exfoliation pawl case 7, the tiptoe 13 is prolonged in the longitudinal direction towards the fixing roller 3 from the lower limit, and the 1st spring 8 which turns and energizes a tiptoe 13 to a fixing roller 3 between the upper limit of the exfoliation pawl 5 and the pin 14 prepared in the exfoliation pawl case 7 is stretched. The upper part of a release lever 6 is pivoted in the support shaft 16 which this 1st spring 8 set caudad and was prepared in the exfoliation pawl case 7. Protrude a pin 17 on the lower part of this release lever 6, and the 2nd spring 9 which does not apply the force to a tiptoe 13 between this pin 17 and the pin 18 which protruded on the lower part of the exfoliation pawl 5 is stretched. The 3rd spring 10 has wound around the support shaft 16, and the both ends engaged with the upper part of the exfoliation pawl case 7, and a pin 17, respectively, and have always given a clockwise turning effort to the release lever 6 in drawing. A delivery unit 2 pivots the lower part of the airframe 20 in the support shaft 21 prepared in machine frames, such as a copying machine which is not illustrated, the pressurization arm 22 projected towards the fixing section 1 is formed in the upper part, and pair 23 is prepared in the middle at the delivery time. In the above, the magnitude of the force of the 1st, 2, and 3 springs 8, 9, and 10 serves as the 1st spring $8 < 2\text{nd spring } 9 < 3\text{rd spring } 10$.

[0009] In the above mentioned, drawing 1 shows the condition that the delivery unit 2 serves as close, at this time, the pressurization arm 22 presses the pin 17 of a release lever 6, the tension of the 3rd spring 10 stops acting on the exfoliation pawl 5 by this, and the exfoliation pawl 5 becomes that the tiptoe 13 carried out pressurization contact with as at the fixing roller 3 with the welding pressure which was pulled by only the 1st spring 8 and stabilized. after the form was conveyed by the nip section of both the rollers 3 and 4 from the method of the right to the place of such a condition and the surface is fixed to an image, it exfoliates with the exfoliation pawl 5 -- having -- the delivery time of a delivery unit 2 -- a pair -- it is discharged by 23.

[0010] the condition that, as for drawing 2, the delivery unit 2 serves as open -- being shown -- this time -- the pressurization arm 22 -- from the pin 17 of a release lever 6 -- estranging -- the tension of the 3rd spring 10 -- a release lever 6 -- a center -- carrying out -- a clockwise rotation -- rotating -- the tension of the 1st spring 8 -- overcoming -- the 2nd spring 9 -- minding -- the exfoliation pawl 5 -- a center -- carrying out -- a clockwise rotation -- rotating -- that tiptoe 13 -- from a fixing roller 3 -- estranging --

[0011]

[Effect of the Invention] This invention is above. Invention of claim 1 The fixing section which has a fixing roller and the pressurization roller pressurized by this fixing roller, Have the delivery unit installed in the delivery side of this fixing section possible [closing motion], and the exfoliation pawl which has the tiptoe which can attach and detach to a fixing roller in the fixing section is formed. Since that tiptoe estranges this exfoliation pawl from a fixing roller at the time of disconnection of a delivery unit and carries out pressurization contact at a fixing roller at the time of this closing In addition to protection of an operator's safety and an exfoliation pawl being performed good, it is effective in good workability being acquired in the cases, such as removal of the jam paper generated at the time of disconnection of a delivery unit. Invention of claim 2 is set to invention of claim 1. At the time of closing of a delivery unit The pressurization contact of the tiptoe of an exfoliation pawl is carried out at the fixing roller of the fixing section only by the single energization member prepared in the fixing section, without receiving the effect of other members, such as a delivery unit. Since the tiptoe of an exfoliation pawl is estranged from a fixing roller by the discharge member prepared in the fixing section at the time of disconnection of a delivery unit having the same effect as invention of claim 1 -- in addition, it is effective in the separability of a form being good, without applying the welding pressure stabilized to the exfoliation pawl, and producing wear of the surface of a fixing roller, and the tiptoe of an exfoliation pawl.

[Translation done.]

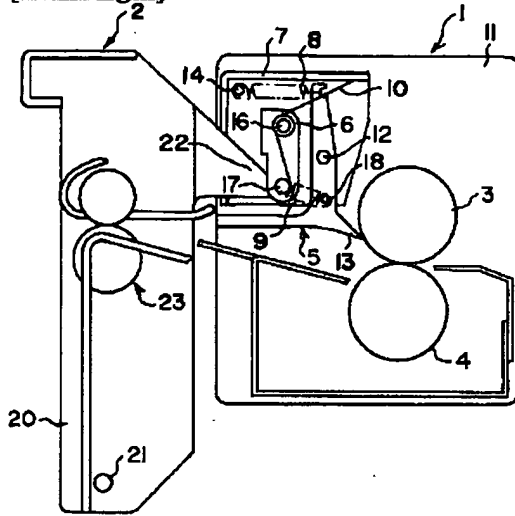
* NOTICES *

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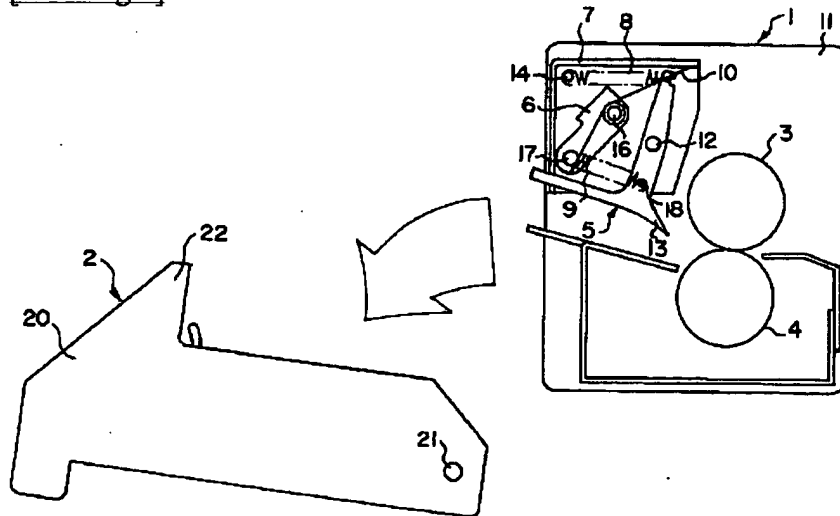
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DRAWINGS

[Drawing 1]



[Drawing 2]



[Translation done.]